

WHERE IS THE PIERCE'S DISEASE...

...and How Do We Find It?



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GPS and Remote Sensing GIS Mapping and Analysis Geospatial Statistics Modeling

Map of California showing major cities, counties, and the Pacific Ocean. A shaded area in the Central Valley is marked with two large question marks '??'. The map includes a scale bar (0 to 40 miles) and a compass rose. Major cities labeled include San Francisco, Sacramento, Carson City, Reno, Las Vegas, and San Diego. Major counties labeled include Del Norte, Siskiyou, Modoc, Shasta, Lassen, Humboldt, Trinity, Tehama, Plumas, Glenn, Butte, Yuba, Sutter, Sierra, Nevada, Placer, Sonoma, Napa, Solano, Contra Costa, Alameda, San Francisco, Marin, San Mateo, Santa Clara, Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, Kern, Orange, San Diego, Imperial, and Inyo. The Pacific Ocean is labeled on the west coast, and Mexico is labeled on the south coast.

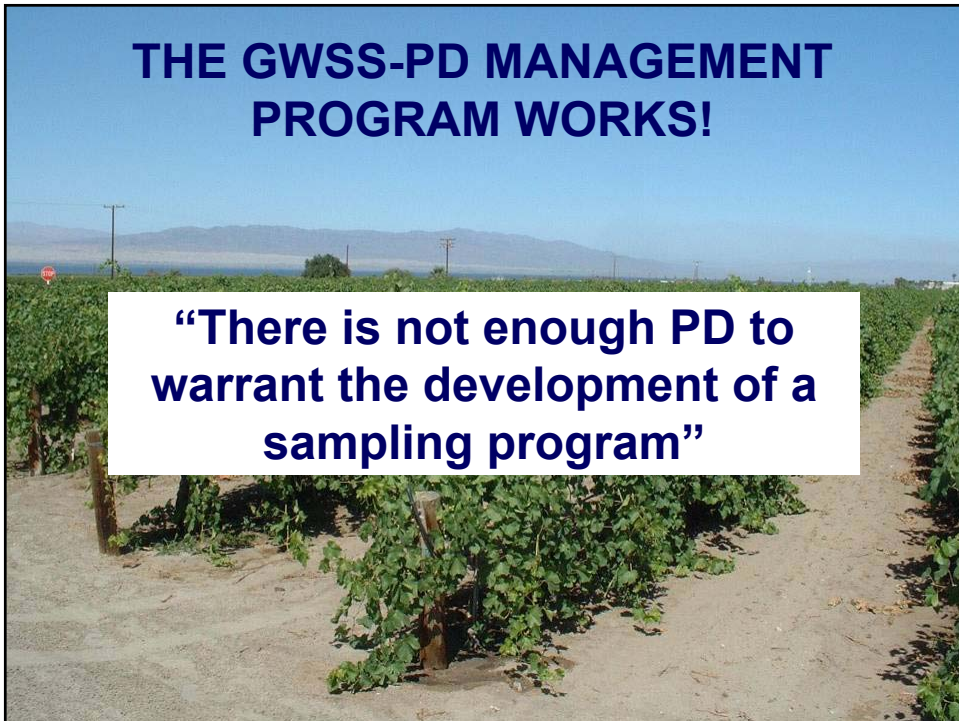
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(805) 685-3100 www.maps.com



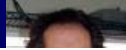


THE GWSS-PD MANAGEMENT PROGRAM WORKS!

“There is not enough PD to warrant the development of a sampling program”



CDFA Research Scientific Advisory Panel (RSAP)



Dr. Alex Bortugno

“Another important gap is an integrated GIS-based database that includes GWSS population density information, **Xf genotype distribution**, **PD distribution**, crop information, temperature and geographical information.”



Dr. George Sundin



Dr. Daniel Sumner



Dr. Greg Loeb

CDFA Research Scientific Advisory Panel (RSAP)

“Research areas to target for further funding...

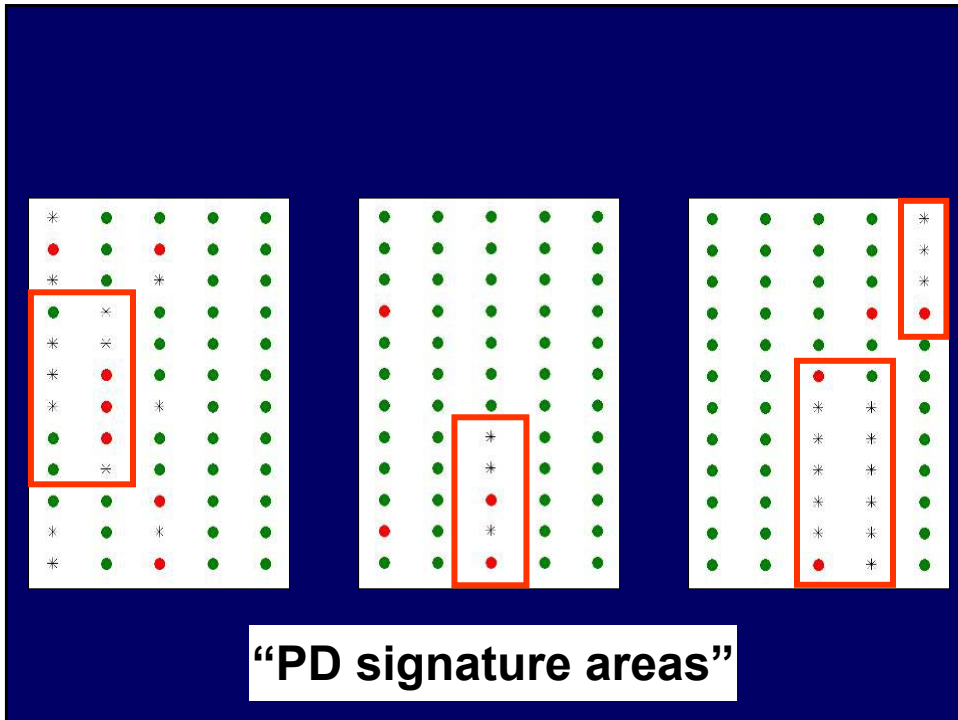
Expansion and enhancement of the GIS database to include **location of PD-infected vines**, **location of specific Xf genotypes**, and location and number of infected vines removed from vineyards.”

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> 790,000 acres of grapes in California

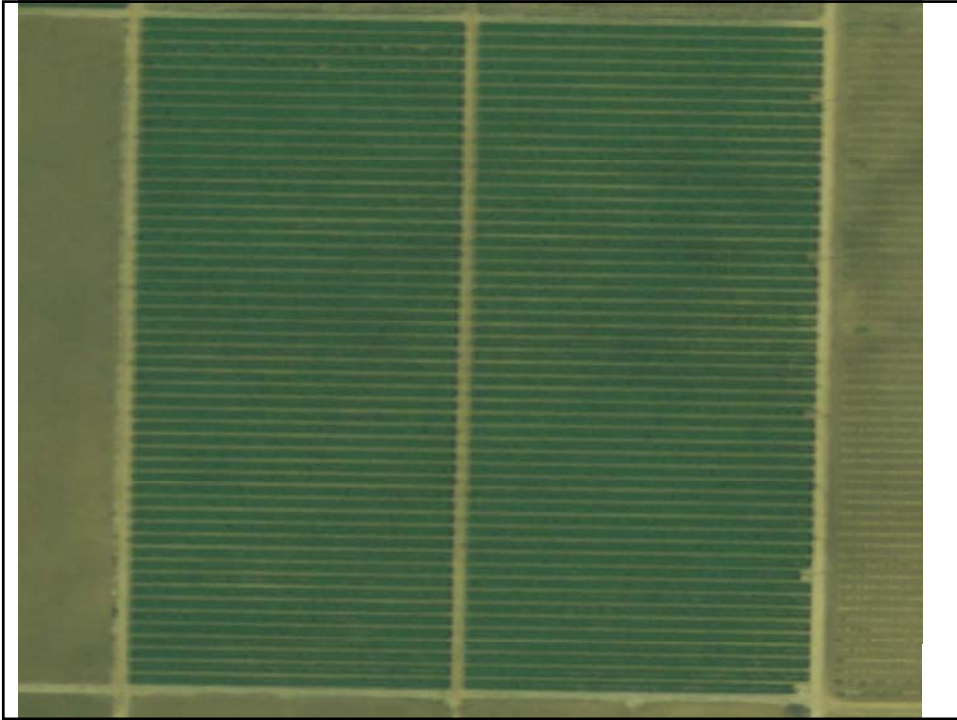




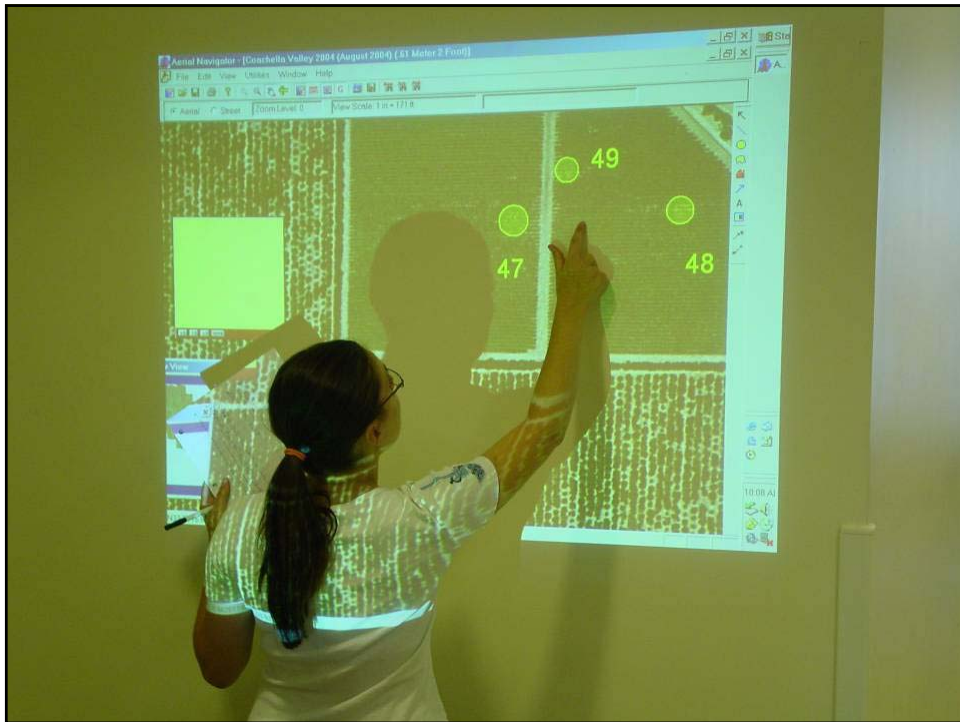


Phase I. Satellite Imagery

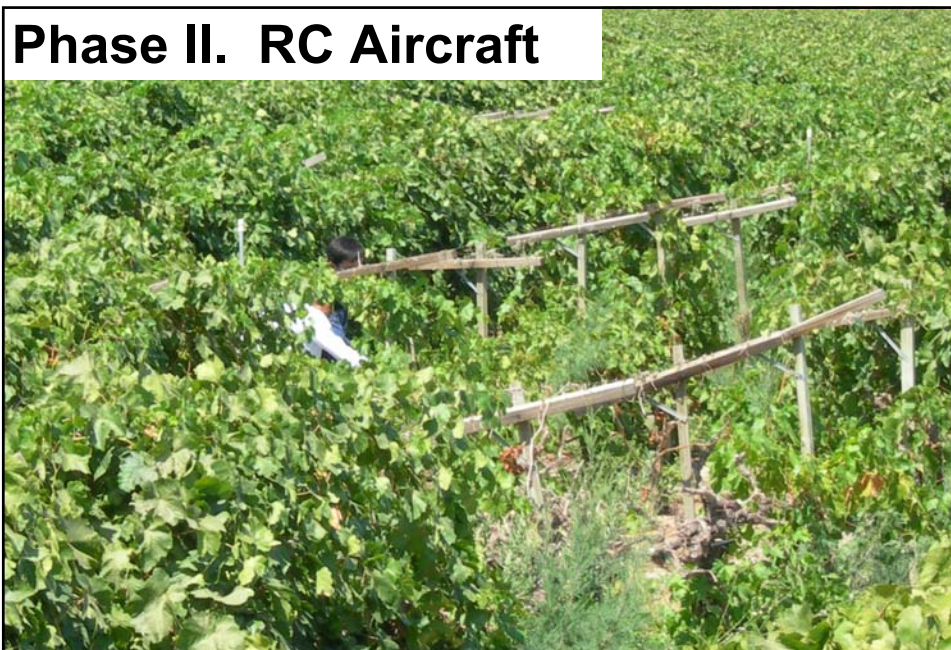






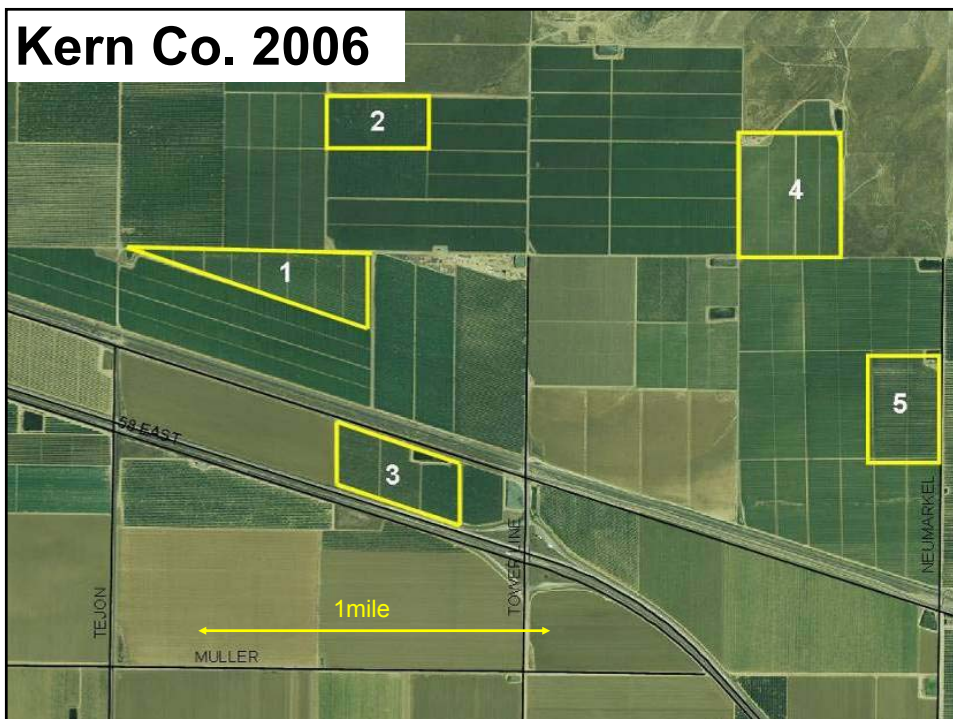
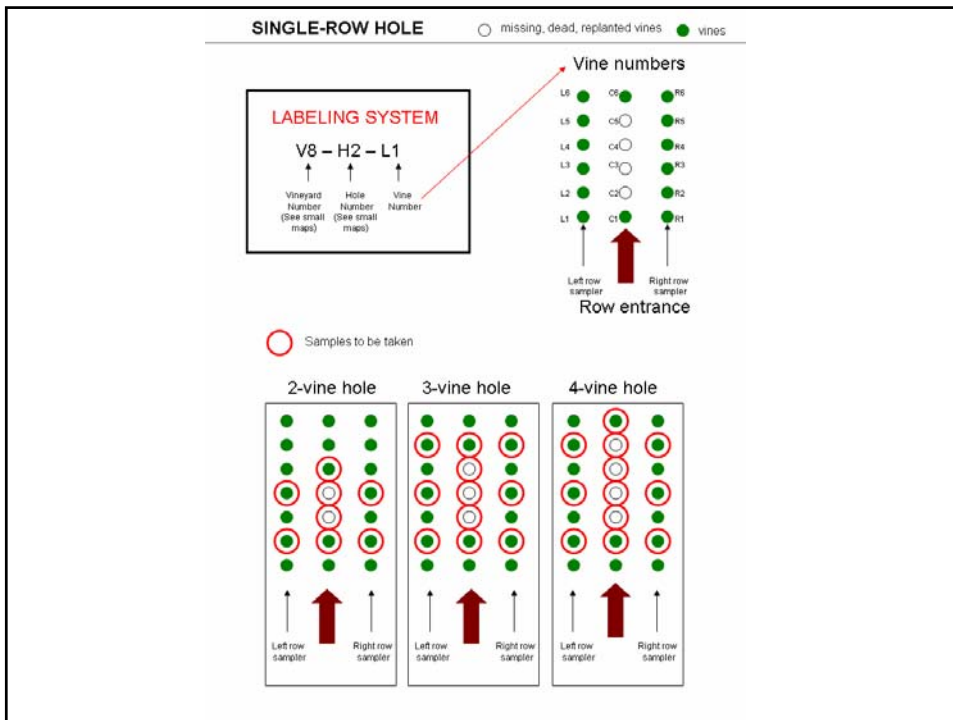


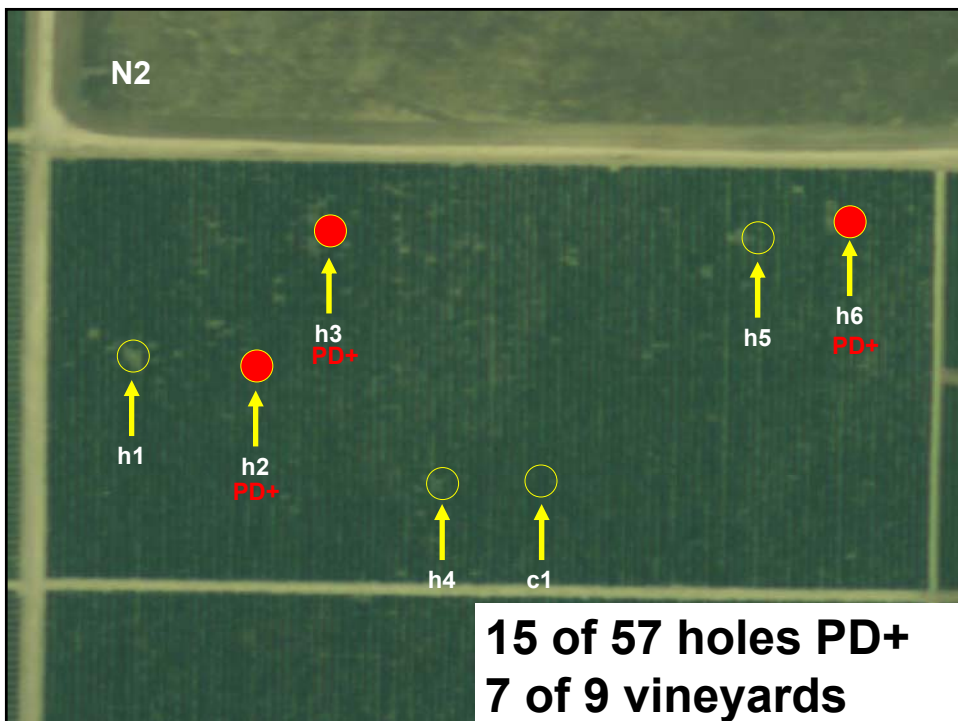
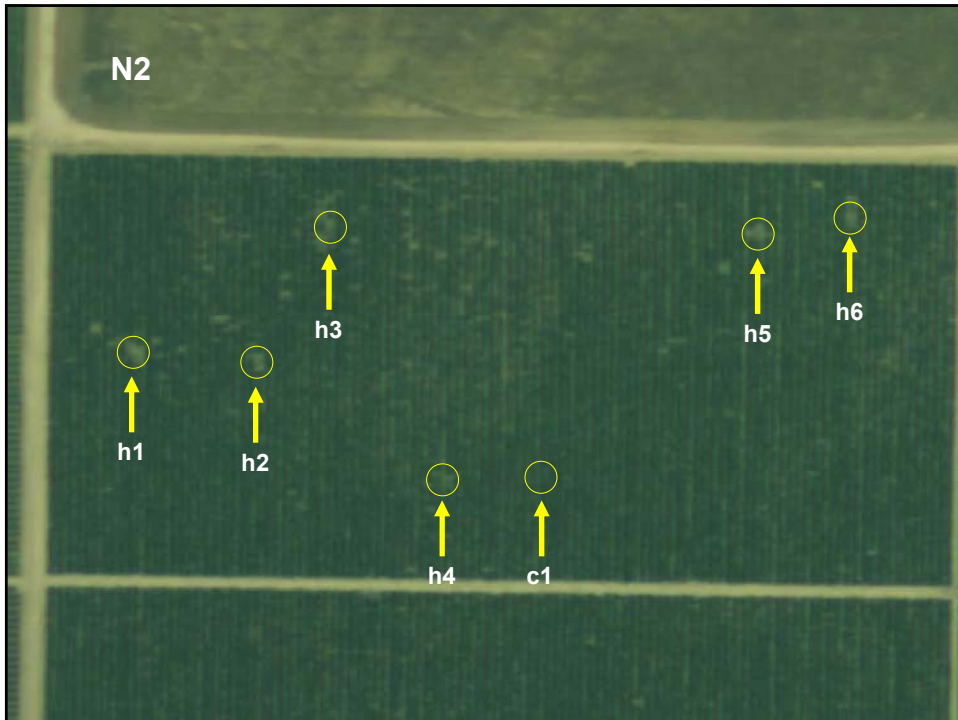
Phase II. RC Aircraft



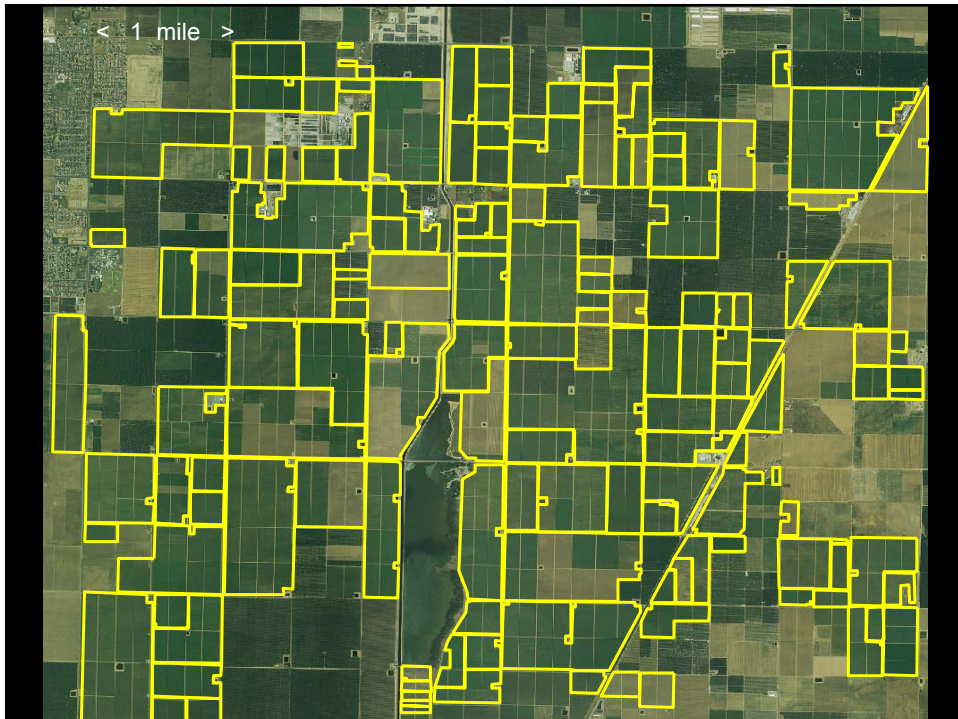
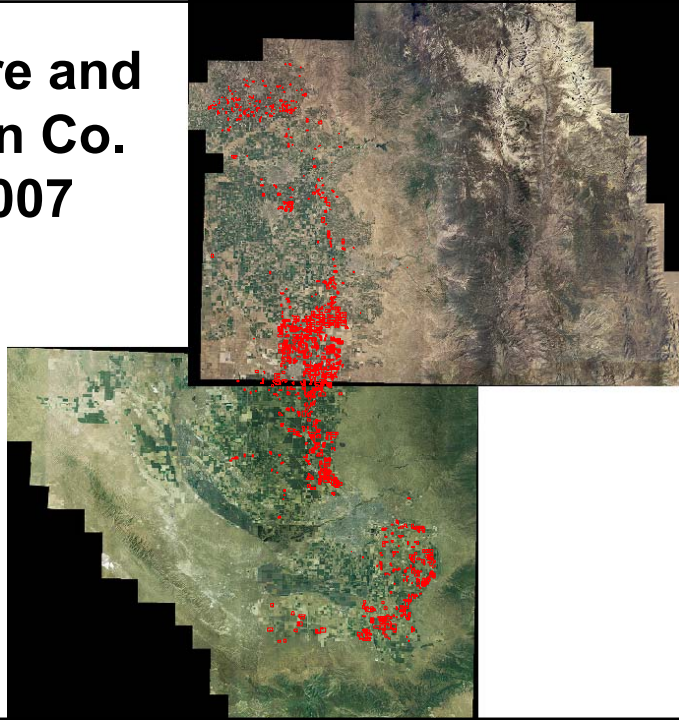
Dr. YL Park, West Virginia University

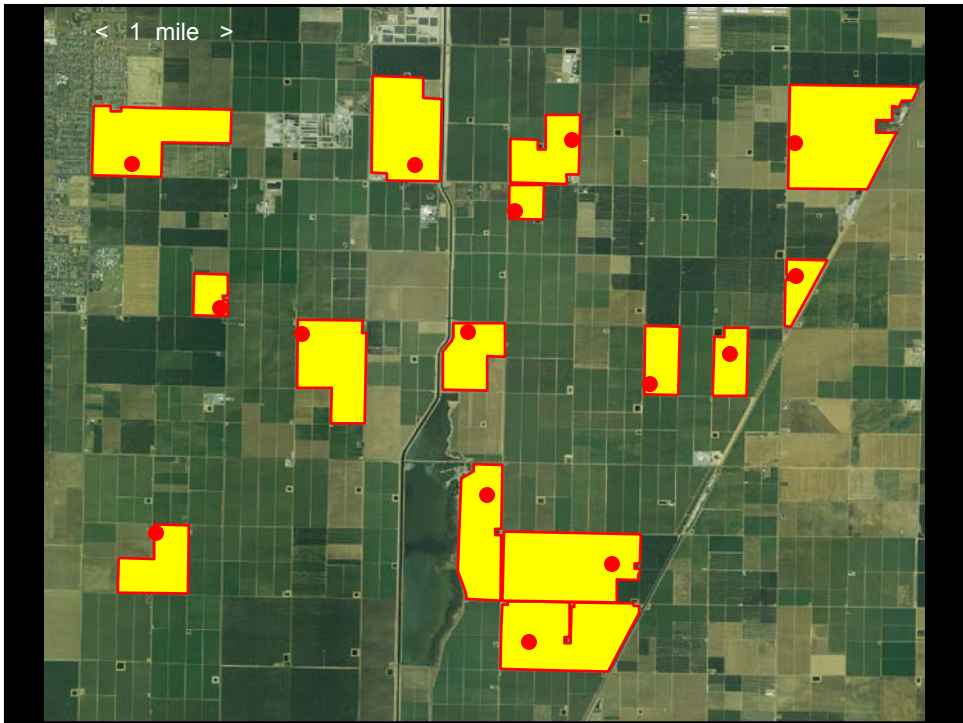
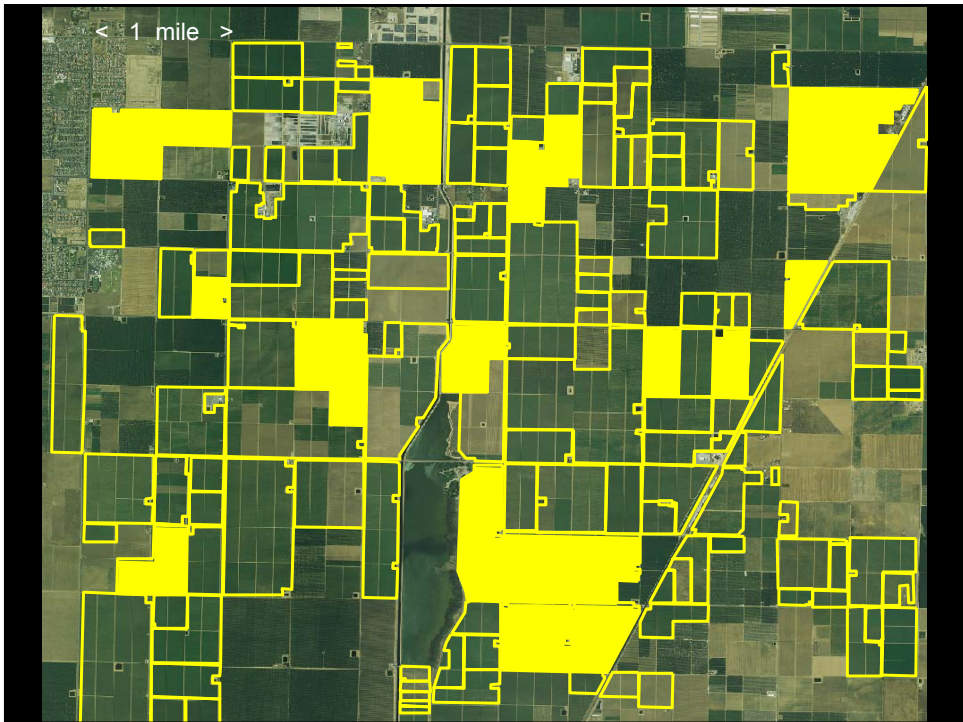


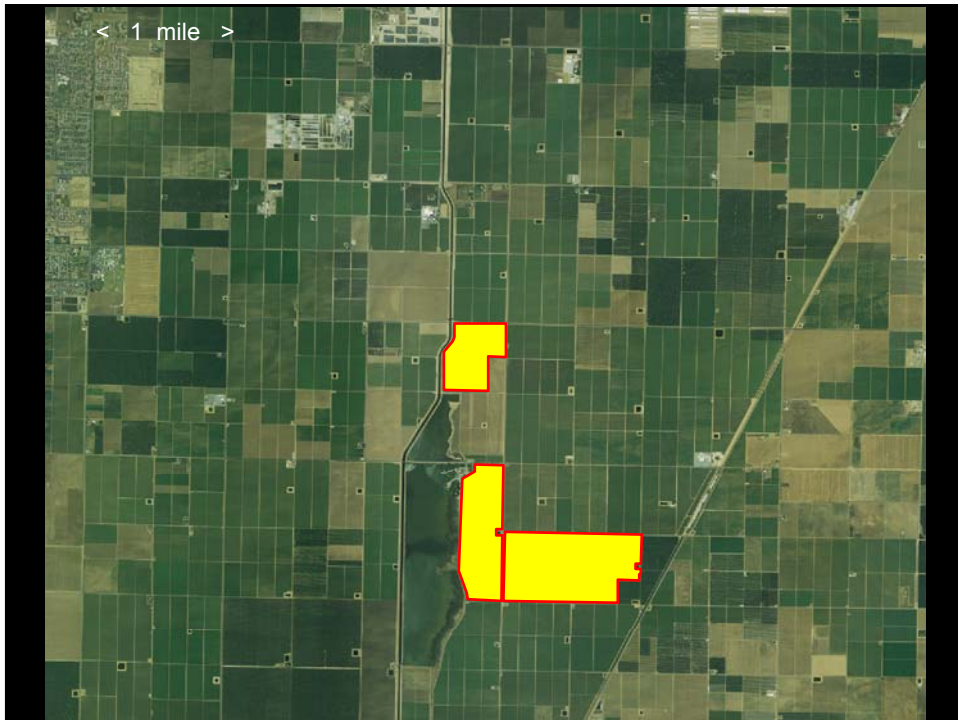




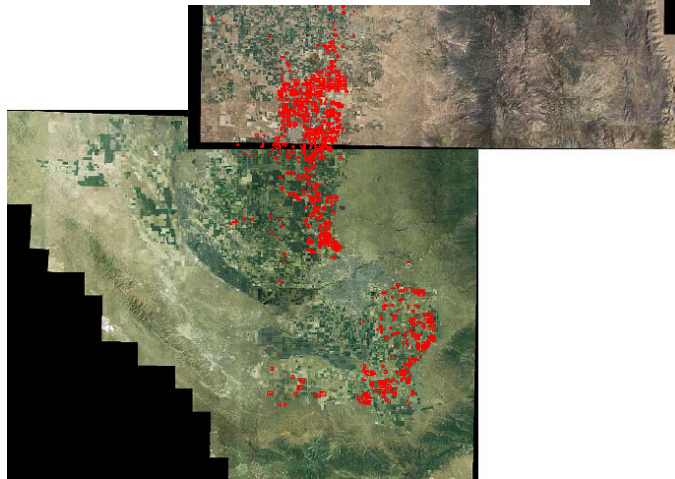
Tulare and Kern Co. 2007

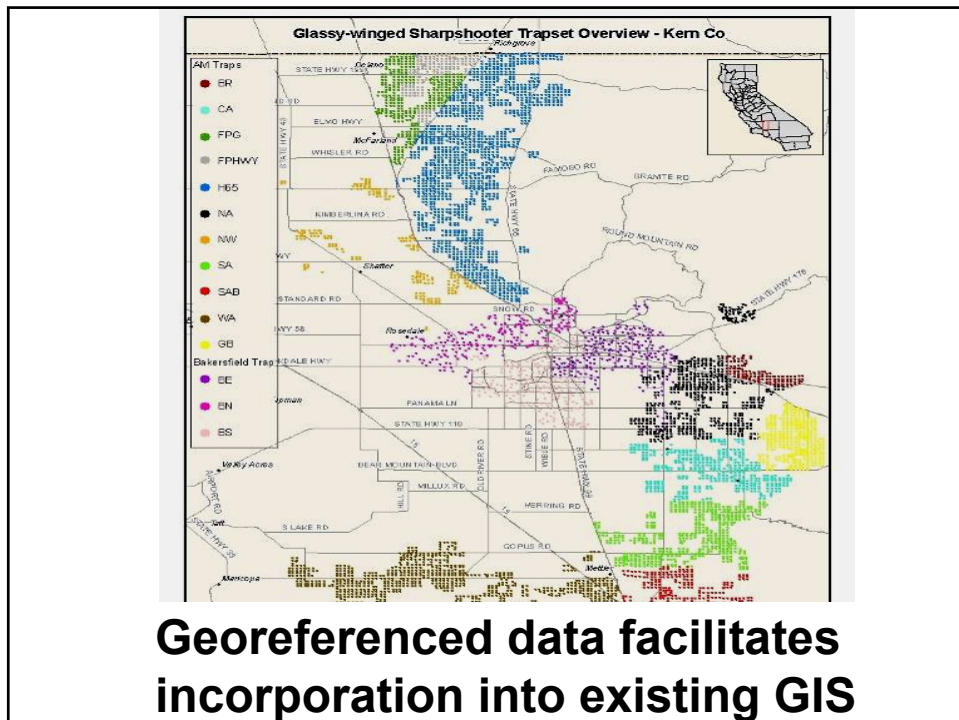






Over 3 week period...
Evaluated 526 sites (30,352 acres).
Sampled 76 sites.
Found PD in 9 new sites.





Stakeholders

Growers

- 1. Roguing infected vines**
- 2. Replanting into infected areas**
- 3. Reluctance?**
 - a. Economics of diseased vines.**
 - b. Vine loss replacement prgm.**

Stakeholders

Growers

Regulatory Agencies

County Ag Commissioners
CDFA

- 1. Prioritize treatment areas.**
- 2. Where do we need to use new varieties?**
- 3. Risk Mapping (other SS?)**

Stakeholders

Growers

Regulatory Agencies

Cooperative Extension Advisers

- 1. Integrated pest programs.**
- 2. Recommendations/advice based on more complete info.**

Stakeholders

Growers

Regulatory Agencies

Cooperative Extension Advisers

Scientific Community

- 1. Landscape epidemiology.
How does GWSS contribute to
X.f. spread?**

Stakeholders

Growers

Regulatory Agencies

Cooperative Extension Advisers

Scientific Community

- 1. How does GWSS contribute to *X.f.* spread?**
- 2. What biotic/abiotic conditions lead to spread?**
- 3. Impact/Dist. of *X.f.* strains**

Cooperators

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**Jennifer Hashim Buckey & Murry Pryor
UC Cooperative Extension, Bakersfield**

**Barry Hill & Rosie Yacoub
CDFA, Sacramento**

Acknowledgments

- Consolidated Central Valley Table Grape Pest and Disease Control District (Kern and Tulare Counties)
- California Desert Grape Administrative Committee
- University of California PD Research Grants Program
- CDFA Pierce's Disease Control Program
- Coachella Valley Grape Growers

Questions?

